Public Hearing – Monday, March 4, 2013
FINANCE, REVENUE AND BONDING COMMITTEE

Testimony Submitted by Justin M. Roller

S.B. No. 840 - An Act Concerning Next Generation Connecticut

Thank you for the opportunity to present testimony regarding S.B. No. 840 - An Act Concerning Next Generation Connecticut. I welcome the opportunity to offer the following testimony.

Through its proposed 10-year, $1.5 billion investment in the University of Connecticut's science, technology, engineering and mathematics (STEM) programs, this bill will fuel Connecticut's economy and pave the way for new technologies and companies, patents, licenses, and high-wage STEM jobs. This bill calls for a major expansion of and investment in UConn—increasing enrollments in STEM disciplines, adding new faculty, and improving infrastructure.

This bill is important to me because I am a 3rd year PhD student in the Materials Engineering and Science department at UConn. It is also important because I am also a father who cares deeply about creating the future opportunities necessary for my two daughters to be competitive in a globalized economy. It seems clear that the State must make the critical investments today for the workforce of tomorrow. This investment will not only accommodate the oncoming wave of retirements but also increase the attractiveness of the State for new enterprise. US companies are free to find the staffing resources needed whether that involves going overseas or harvesting home-grown talent. Let's make sure that the talent for tomorrow's jobs comes from within and that we make the prescient choices to ensure the human talent and material infrastructure exists in Connecticut. The days of a college education as an option for upward mobility are long gone. The difference in unemployment between college graduates and non-degreed workers will only widen as the economy gravitates toward high-tech and automation. As a State we have to leverage previous investments to plan today for the economy we want tomorrow. Connecticut can follow the lead of States like Georgia and California that have already seen significant returns on these types of investments. This critical investment will assure that UConn has the capacity to train those talented and ambitious students that want to pursue STEM education.

In the past, America had a formula for success by cultivating the greatest public-private partnerships on the planet. This formula was based on five pillars (policy initiatives) dating back to Alexander Hamilton and Lincoln up to the end of the cold war. As a country we:

1) Educated our people up to and beyond whatever technology existed (cotton gin, personal computer) to use and exploit these technologies and leverage economic growth
2) Built the world's best infrastructure – roads, telecom, airports, things that enhance and spur economic growth
3) Enacted the world's most open immigration policy (attracting the most energetic immigrants seeking a better life and high IQ risk takers that start
4) Created the right rules to incentivize risk and investment while preventing recklessness.
5) Invested in government funded research to push out the boundaries of science and technology– this created the gardens for venture capitalists to grow the most promising crop and turn them into the industries of tomorrow.

This is precisely what we have moved away from and one reason we have fallen behind in the world.

Connecticut must remember, rejuvenate, refurbish and reinvest in this five part formula in order to meet the challenges facing the American future. Failure to do so will be detrimental to the rate of economic growth. Our historic formula should recognize the following challenges:

1) Globalization has added 2 billion people, with a desire to attain middle class living standards, ready to compete in an increasingly global workforce.
2) A revolution in information technology that has stripped away whole categories of jobs (millions) that must be replaced.
3) Annual budget deficits and debt that has piled up both federal and state.
4) A Pattern of energy consumption and the impact of the use of fossil fuels on our environment and our climate.

These are huge challenges that we are not currently meeting. The Next Generation Connecticut initiative recognizes that the key to meeting many of these challenges rests in providing adequate infrastructure and growing human talent.

Bringing new faculty with a wide range of experience and research strengths will help to create the critical mass of expertise that allows talented graduate students to tackle the tough, relevant and interdisciplinary challenges in cutting edge research. As a fuel cell and battery researcher, I can see that the history of research and investment in fuel cells has uniquely positioned Connecticut. Although only a small and budding industry exists today the potential to capitalize on this vibrant cluster of talent, supply chains, and infrastructure makes our State a very attractive place for business in alternative energy.

Recently Advent Technologies, a fuel cell company from Greece, has relocated to this State precisely because of this cluster. Through industry-university collaboration our research group is going to work on trying to improve the manufacturability and drive down cost in one of their components. This is just one small example of how the University can attract new business while exposing the future work force to industrially relevant research.

Finally we have to assure the next generation of students the access to opportunity and facilities if we want to remain competitive in the global economy. These things don't happen by accident but by vision, investment and hard work. Our own Materials Engineering and Science program has transmission electron microscopes that are over 10 years old; a lifetime in the fast paced research fields of engineered materials, nanotechnology and advanced catalysis. Top notch researchers should be coming to UConn to do cutting-edge research instead of our talent going to Massachusetts or New York to access state-of-the-art equipment.

Connecticut relies upon ready access to a highly skilled workforce of engineers who can help us invent new products and services, continually improve our operations, and embark on new technological frontiers to effectively compete in the global arena. Next Generation Connecticut will also spawn a new generation of entrepreneurs who will help sustain Connecticut's economy. If enacted, the bill will support:

- A 30 percent increase in enrollment at UConn, to include more than 6,500 students and 200 new STEM faculty at the UConn Storrs and UConn Stamford campuses;
- A 70 percent increase in engineering undergraduate enrollments;
- A 47 percent expansion in the total number of STEM graduates;
- Addition of 50 STEM doctoral fellowships and creation of a premier STEM honors program;
- $1.54 billion in bonding to construct new STEM facilities, build out teaching and research labs, upgrade information technology, and renovate and build additional housing and parking.

Thank you for the opportunity to present testimony on this proposal.

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